

**IN THE ABSTRACT:**

Please delete the Abstract and insert the following:

B1 -- A protein which inhibits osteoclast differentiation and/or maturation and a method for producing the protein. The protein is produced by human embryonic lung fibroblasts and has a molecular weight of about 60 kD and about 120 kD under non-reducing conditions and about 60 kD under reducing conditions on SDS-polyacrylamide gel electrophoresis. The protein can be isolated and purified from the culture medium of fibroblasts. Furthermore, the protein can be produced by gene engineering. The present invention includes cDNA for producing the protein by gene engineering, antibodies having specific affinity for the protein or a method for determining protein concentration using these antibodies. --

**IN THE SPECIFICATION:**

Applicants have amended the specification to correct translation errors. No new matter is being introduced. Please enter the following amendments:

NE Page 1, Line 8, delete "In the process, osteoblasts" and insert --Osteoblasts--;

Line 10, after "of" (first occurrence) insert --a--; delete "the progression of";

Line 11, delete "The disease" and insert --Osteoporosis--; delete "be provoked" and insert --result--;

Line 12, delete "by the condition in which" and insert --when--;

Line 14, after "causes" insert --bone--; delete "in the bone"; after "makes" delete "the bone" and insert --bone's--;

Line 15, delete the line in its entirety and insert --fragile, leading to fracture, particularly in elderly patients.--;



Line 16, delete "bedridden old people, it has" and insert --Osteoporosis has  
therefore--;

Line 17, delete "old" and insert --elderly--; after "people" insert --in the population--;  
delete "efficacious" and insert --effective--;

Line 18, delete "the";

Line 20, delete "balanced" and insert --balance of bone--;

Line 21, delete "expected to be";

Line 22, delete "are reported" and insert --reportedly--; and

Line 23, delete "to"; delete "differentiation" and insert --differentiation--.

Page 2, Line 4, delete "Mol, Cell," and insert --Mol. Cell.--;

Line 5, after "M" insert a period --.;

Line 7, after "A" insert a period --.;

Line 8, after "Biol" insert a period --.;

Line 9, delete "1993" and insert --1993)--;

Line 10, delete "inhibits" and insert --inhibit--;

Line 11, delete "have been paid attention and have"; and insert --have also--;

Line 14, delete "are found to";

Line 15, delete "Macrophage" and insert --macrophage--;

Line 19, delete "are found to";

Line 21, delete "efficacious" and insert --effective--;

Line 23, delete "The cytokines" and insert --Cytokines--; delete "insulin like" and  
insert --insulin-like--; and



Line 24, delete "are now" and insert --have been--;

Page 3, Line 1, delete "effects in treatment of" and insert --effectiveness for treating--;

Line 2, delete "as a drug to care" and insert --to treat--; after "osteoporosis" (second occurrence) insert --patients--;

Line 6, delete "preparations ." and insert --preparations.--;

Line 7, delete "have been" and insert --are--;

Line 8, delete "As mentioned," and insert --Since--; delete "controlled" and insert --manifest--;

Line 9, delete "formation." and insert --formation,--; delete ". Therefore";

Line 12, delete "Disclosure" and insert --Summary--;

Line 13, delete the line in its entirety and insert --The--;

Line 14, after "factor" insert a comma --,--;

Line 15, after "(OCIF)" insert a comma --,--;

Line 22, delete "using" and insert --on--; after "pieces" insert --, which function--;

and

Line 23, delete "the".

Page 4, Line 3, delete "chromatography," and insert --chromatography:--;

Line 5, delete "The inventors, based on" and insert --After determining--;

Line 6, delete the line in its entirety and insert --OCIF, a cDNA encoding this protein was successfully cloned.--;

Line 7, delete the line in its entirety and insert --A procedure for producing this protein was also established.--;



Line 8, delete "differentiation of osteoclasts. This" and insert --The--;

Line 9, after "has" insert --a--; delete "weights in" and insert --weight by--;

Line 10, delete "60 KD" and insert --60kD--; delete "in the" and insert --under--;  
delete "120KD" and insert --120kD--; before "non-reducing" delete "the"; after "conditions,"  
(second occurrence) insert --and--;

Line 11, delete "heparin, reduces its activity" and insert --heparin.--;

Line 12, before "to" insert --The protein's ability--; after "inhibit" insert --the--; delete  
"if" and insert --is reduced when--;

Line 13, delete "lose its activity" and insert --its ability--;

Line 14, delete "by the treatment" and insert --is lost when treated--;

Line 15, delete "protein OCIF which is described in" and insert --OCIF protein of--;

Line 16, delete "of know factors inhibiting" and insert --other factors known to inhibit  
the--;

Line 18, delete "to purify" and insert --for purifying--; delete "comprising ;" and  
insert --comprising:--;

Line 23, before "(6)" insert --and--; and

Line 24, after "F3GA" insert --may be--.

Page 5, Line 1, delete the line in its entirety and insert --hydrophilic polymers, for example.--;

Line 2, delete "columns." (first occurrence); delete "colomns" and insert --columns--;

Line 3, delete "accumulating the" and insert --producing--; delete "to a" and insert  
--in--;

Line 6, delete "the" (third occurrence);



Line 7, after "the" insert --oligonucleotide--;

After Line 9 insert --The full length OCIF cDNA encoding the OCIF protein is cloned from a cDNA library using an OCIF DNA fragment as a probe. The OCIF cDNA containing the entire coding region is inserted into an expression vector. Recombinant OCIF can be produced by expressing the OCIF cDNA, containing the entire coding region, in mammalian cells or bacteria.--

Before Line 10 insert

--Brief Description of the Figures

Figure 1 shows the elution pattern of crude OCIF protein (HiLoad-Q/FF pass-through fraction; sample 3) from a HiLoad-S/HP column.

Figure 2 shows the elution pattern of crude OCIF protein (heparin-5PW fraction; sample 5) from a blue-5PW column.

Figure 3 shows the elution pattern of OCIF protein (blue-5PW fraction 49 to 50) from a reverse-phase column.

Figures 4A and 4B shows the SDS-PAGE of isolated OCIF proteins under reducing or non-reducing conditions. Description of the lanes:

lane 1, 4: molecular weight marker proteins;

lane 2, 5: OCIF protein of peak 6 in figure 3;

lane 3, 6: OCIF protein of peak 7 in figure 3.

Figure 5 shows the elution pattern of peptides obtained by the digestion of pyridyl ethylated OCIF protein digested with lysylendopeptidase, on a reverse-phase column.



Figure 6 shows the SDS-PAGE of isolated natural (n) OCIF protein and recombinant (r) OCIF proteins under non-reducing conditions. rOCIF (E) and rOCIF (C) proteins were produced by 293/EBNA cells and by CHO cells, respectively. Description of the lanes:

- lane 1: molecular weight marker proteins;
- lane 2: a monomer type nOCIF protein;
- lane 3: a dimer type nOCIF protein;
- lane 4: a monomer type rOCIF (E) protein;
- lane 5: a dimer type rOCIF (E) protein;
- lane 6: a monomer type rOCIF (C) protein;
- lane 7: a dimer type rOCIF (C) protein.

Figure 7 shows the SDS-PAGE of isolate natural (n) OCIF proteins and recombinant (r) OCIF proteins under reducing conditions. rOCIF (E) and rOCIF (C) were produced by 293/EBNA cells and by CHO cells, respectively. Description of the lanes:

- lane 8: molecular weight marker proteins;
- lane 9: a monomer type nOCIF protein;
- lane 10: a dimer type nOCIF protein;
- lane 11: a monomer type rOCIF (E) protein;
- lane 12: a dimer type rOCIF (E) protein;
- lane 13: a monomer type rOCIF (C) protein;
- lane 14: a dimer type rOCIF (C) protein.

Figure 8 shows the SDS-PAGE of isolated natural (n) OCIF proteins and recombinant (r) OCIF proteins from which N-linked sugar chains were removed under reducing



conditions. rOCIF (E) and rOCIF (C) are rOCIF proteins produced by 293/EBNA cells and by CHO cells, respectively. Description of the lanes:

- lane 15: molecular weight marker proteins;
- lane 16: a monomer type nOCIF protein;
- lane 17: a dimer type nOCIF protein;
- lane 18: a monomer type rOCIF (E) protein;
- lane 19: a dimer type rOCIF (E) protein;
- lane 20: a monomer type rOCIF(C) protein;
- lane 21: a dimer type rOCIF(C) protein.

Figure 9 shows a comparison of OCIF and OCIF2 amino acid sequences.

Figure 10 shows a comparison of OCIF and OCIF3 amino acid sequences.

Figure 11 shows a comparison of OCIF and OCIF4 amino acid sequences.

Figure 12 shows a comparison of OCIF and OCIF5 amino acid sequences.

Figure 13 shows a standard curve determining OCIF protein concentration by an EIA employing anti-OCIF polyclonal antibodies.

Figure 14 shows a standard curve determining OCIF protein concentration by an EIA employing anti-OCIF monoclonal antibodies.

Figure 15 shows the effect of rOCIF protein on model rats with osteoporosis.--;

Page 5, Line 15, delete "procedure includes" and insert --procedures include--;

Line 16, delete "lyophylization" and insert --lyophilization--; delete "procedure includes" and insert --procedures include--;



Line 21, delete the line in its entirety and insert --fibroblasts used for the production of OCIF protein are preferably IMR-90 cells. A--; and

Line 22, delete "the".

Page 6, Line 1, delete ", using" and insert --in--;

Line 2, delete "for the cell culture";

Line 4, delete "preferably" and insert --preferably--;

Line 5, delete "purification steps of OCIF protein." and insert --protein purification procedure.--

Line 6, before "OCIF" insert --The--; delete "initially obtained" and insert --obtained initially--;

Line 7, delete "heparin binding basic" and insert --basic heparin binding--;

Line 9, delete "then by";

Line 10, before "non-" insert --the--;

Line 13, delete the period "." and insert a comma --,--; before "Cibacrone" insert --a--;

Line 14, delete "Elmer) and" and insert --Elmer).--;

Line 15, delete the line in its entirety.

Line 17, delete "method of" and insert --method for--;

Line 18, delete "protein that inhibits differentiation and/or" and insert --protein.--; and

Line 19, delete "maturation of osteoclasts.".

Page 7, Line 1, delete "was synthesized." and insert --is synthesized.--;

Line 4, delete "the" (second occurrence);



Line 5, delete "obtained" and insert --an--;

Line 6, delete "The recombinant" and insert --Recombinant--;

Line 7, after "cDNA" insert a comma --,--; after "region" insert a comma --,--;

Line 12, delete "by hybridization"; before "probe" insert --hybridization--;

Line 14, before "can be" insert --protein--;

Line 15, after "cDNAs" insert a comma --,--; after "region" insert a comma --,--;

Line 16, after "in" delete "the"; after "variant" insert --protein--;

Line 18, after "variant" insert --protein--; delete "an" and insert --the--;

Line 20, before "replacement" insert --the--; after "residue" insert a comma --,--; and

Line 21, delete "formation with serine residue, and" and insert --formation, with a serine residue or--.

Page 8, Line 1, delete "by";

Line 2, delete "containing" and insert --having--;

Line 9, delete "As antigens (immunogens), natural" and insert --Natural--;

Line 11, delete "designed";

Line 13, delete "used." and insert --used as antigens.--;

Line 14, after "antigens" insert a comma --,--; delete "for immunization";

Line 15, delete "purifying from the serum by the" and insert --and purifying the antibodies from the serum by--; delete "The";

Line 16, delete "anti-OCIF" and insert --Anti-OCIF--; delete "radioisotopes" and insert --radioisotopes--;



Line 17, delete "system or immunoassay (EIA) system." and insert --systems or enzyme-immunoassay (EIA) systems.--;

Line 18, delete "By using" and insert --Using--; delete "concentrations" and insert --concentration--;

Line 19, delete "blood and" and insert --blood,--; delete "cells-culture" and insert --cell-culture--;

Line 21, delete the line in its entirety;

Line 22, delete the line in its entirety; and

Line 23, delete the line in its entirety.

Page 9, Line 1, delete the line in its entirety;

Line 3, delete "to" and insert --for--; delete "determine" and insert --determining--;

Line 5, delete "the";

Line 6, delete "method" and insert --methods--;

Line 8, delete "using" and insert --transfected with--;

Line 9, delete "synthesized peptides designed" and insert --synthetic peptides--;

Line 11, delete "immunization of mammals" and insert --immunizing mammals such as mice or rats--;

Line 12, delete "myeloma of mammals" and insert --mammalian myeloma cells--;

Line 13, delete "hybridoma." and insert --hybridomas.--; delete "antibody" and insert --antibodies--; delete "recognizes" and insert --recognize--;

Line 14, delete the line in its entirety and insert --OCIF were selected and cultured to obtain the desired antibodies.--;



Line 15, delete the line in its entirety;

Line 16, delete the line in its entirety;

Line 17, delete the line in its entirety and insert --For immunizations, OCIF is suitably diluted with--;

Line 19, delete "for";

Line 20, after "after" insert --the--;

Line 21, delete "taken out" and insert --removed--; and

Line 22, after "lines" insert --useful--; delete "the".

Page 10, Line 1, delete the line in its entirety and insert --Ag8.653, and S194 cells. The rat cell line R-210 may also be used. Alternatively, human B lymphocytes--;

Line 2, before "immunized" delete "are"; delete "and";

Line 3, delete "cell line" and insert --cells--; delete "which are used";

Line 4, delete the line in its entirety and insert --to produce human type antibodies.--;

Line 5, delete "the"; delete "cell line" and insert --cells--;

Line 6, after "by" delete "the";

Line 7, delete "used, and also" and insert --used. Alternatively,--;

Line 8, delete "applied to cell fusion." and insert --used.--;

Line 11, delete the line in its entirety and insert --used to fuse the cells. The fusion products are--;

Line 12, delete "hybridoma." and insert --for hybridomas.--;

Line 13, delete the line in its entirety and insert --An EIA, plaque--;



Line 14, delete "principally used. Among" and insert --used to screen for hybridomas producing anti-OCIF antibodies.--;

Line 15, delete "them, EIA is simple and easy to operate" and insert --EIA is a simple assay which is easy to perform--;

Line 16, delete the line in its entirety and insert --therefore generally used. The desired antibody can be--;

Line 17, delete ". Thus obtained hybridoma" and insert --using EIA and purified OCIF. Hybridomas obtained thereby--; delete "the";

Line 18, delete "method" and insert --methods--;

Line 19, delete "using the" and insert --cells using--;

Line 20, delete "method" and insert --methods--; after "hybridoma" insert --cells--; delete "to" and insert --into live--;

Line 21, after "by" delete "the";

Line 22, delete "obtained";

Line 23, after "antibody" insert --obtained--; delete "for determination of" and insert --to determine--; and

Line 24, delete "for purification of OCIF." and insert --to purify OCIF protein.--.

Page 11, Line 1, delete "to" and insert --for--;

Line 2, delete "By (using)";

Line 3, delete "this assay system," and insert --This assay system is useful for determining--;

Line 4, delete the line in its entirety and insert --blood and ascites.--;



Line 5, delete the line in its entirety and insert --The present invention provides agents, containing OCIF as an--;

Line 6, delete "ingredient are provided by the present invention." and insert --ingredient, that are useful for treating bone diseases.--;

Line 7, after "of" insert --the--;

Line 8, after "weeks" insert --of--;

Line 10, after "by" insert --the--;

Line 11, before "mechanical" insert --the--;

Line 13, delete "ingredients" and insert --ingredient--; after "in" insert --bone diseases--;

Line 14, delete "bone diseases such as";

Line 15, delete "The";

Line 16, delete "to establish" and insert --in the--; delete "the" and insert --bone--;

Line 17, delete "the"; delete "ingredients" and insert --ingredient--;

Line 19, delete "efficacious" and insert --effective--; and

Line 20, delete "human" and insert --humans--; delete "the".

Page 12, Line 1, delete "the" and insert --a--; delete "efficacious" and insert --effective--;

Line 2, before "pharmaceutically" insert --a--; delete "carriers." and insert --carrier.--;

Line 4, after "compounds" insert a comma --,--;

Line 6, delete the line in its entirety and insert --activators for injection, pH adjusters, buffers, stabilizers,--;



Line 7, after "added" insert --by conventional methods--; and

Line 8 - Line 23: delete the lines in their entirety.

Page 13, Delete the page in its entirety.

Page 14, Line 1 to Line 19, delete the lines in their entirety.

Line 22, delete "however," and insert --though--; delete "to the" and insert --thereto--; and

Line 23, delete "examples."

Page 15, Line 6, delete "under" and insert --in--;

Line 8, delete "Coning" and insert --Corning--;

Line 9, delete the comma ",";

Line 17, delete "et. al" and insert --et al.--;

Line 18, after "from" insert --a--;

Line 19, delete " $2 \times 10^{-8} M$ " and insert -- $1 \times 10^{-8} M$ --;

Line 20, delete "D<sub>3</sub>, and each test sample," and insert --D<sub>3</sub> and a test sample--; delete "to" and insert --into--;

Line 21, after "of" insert --a--;

Line 22, delete "further" and insert --maintained--; and

Line 23, delete "continued".

Page 16, Line 1, delete "starting cultivation." and insert --cultivation began.--; delete "after washing" and insert --the plates were washed--;

Line 2, delete "the plates"; after "saline," insert --and the--;



Line 3, delete "temperature, and then osteoclast" and insert --temperature.

Osteoclast--;

Line 4, delete "for" and insert --acid--;

Line 6, delete "The decrease" and insert --A decrease in the number--;

Line 11, delete "The"; delete "filtrated with" and insert --filtered using a--;

Line 13, after "three" insert --30 liter--; delete "(30 1)";

Line 16, before "heparin" insert --the--;

Line 18, delete "as"; and

Line 22, after "overnight" delete ",".

Page 17, Line 4, delete "as";

Line 10, after "with" insert --a--;

Line 11, delete "Each" and insert --Every--; delete "number" and insert --numbers--;

Line 12, delete "was pooled" and insert --were pooled--; delete "Each"; before "of"  
insert --each--;

Line 13, delete "from";

Line 14, delete "The fractions from 21 to 30" and insert --Fractions 21 to 30,--;

Line 15, delete the line in its entirety and insert --activity, were pooled and designated  
sample 4.--;

Line 17, delete "fraction from" and insert --fractions--;

Line 18, after "to" insert --a--; and

Line 21, after "with" insert --a--.

Page 18, Line 1, delete "was" and insert --were--;



Line 2, delete "was" and insert --, were--;

Line 3, delete "was designated as" and insert --designated--;

Line 5, delete "was" and insert --were--;

Line 11, delete "The fractions number" and insert --Fractions--;

Line 12, after "NaCl" insert a comma --,--;

Line 14, delete "from 49 to" and insert --49 and--;

Line 17, delete "of" (second occurrence); after "with" insert --a--; and

Line 20, delete "peak 6 and the peak" and insert --peaks 6 and--.

Page 19, Line 11, delete "(6 and 7) with OCIF activity" and insert --with OCIF activity (peaks 6 and 7)--.

Page 20, Line 2, delete "were" and insert --are--;

Line 3, after "apparent" insert --molecular weight of--; delete "protein" and insert --sample--;

Line 7, delete "protein." and insert --sample.--; and

Line 14, delete "were" and insert --are--.

Page 21, Line 6, delete "No. 51-70 of blue-5PW fraction was" and insert --fractions 51 to 70 of the blue-5PW fractions were--;

Line 7, delete "was";

Line 8, delete "of";

Line 11, delete "peak 6 and peak" and insert --peaks 6 and--;

Line 12, delete "of" and insert --from--;



Line 14, delete "protein" and insert --proteins--; delete "N-terminal" and insert --the N-terminus--;

Line 15, delete "So, internal" and insert --Internal--;

Line 16, after "were" insert --therefore--;

Line 17, delete "of" and insert --from--; delete "peak 7" and insert --7,--; after "C4-HPLC" insert a comma --,--;

Line 20, after "each" insert --of the--; delete "mixture was" and insert --mixtures were--;

Line 21, delete "a"; after "Each" delete "the";

Line 22, delete "was"; and

Line 23, delete "reversed" and insert --reverse--.

Page 22, Line 3, delete "ethyated" and insert --ethylated--; after "vacuum" delete the comma --,--;

Line 10, after "with" insert --a--; after "gradient" insert --of--; delete second "from";

Line 13, delete "were" and insert --are--; delete "Sequence" and insert --SEQ. ID Nos.

1-3--;

Line 14, delete "Numbers 1-3";

Line 16, before "nucleotide" insert --the--; delete "the OCIF cDNA" and insert --OCIF cDNA--;

Line 18, delete "ug" and insert --µg--; delete "by"; and

Line 19, after "using" insert --a--.



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Page 23, Line 1, delete "sequence numbers" and insert --SEQ. ID Nos.--;

Line 2, after "2F" insert --(SEQ. ID No. 107)--;

Line 5, after "3R" insert --(SEQ. ID No. 108)--;

Line 10, after "2F" insert --(SEQ. ID No. 107)--;

Line 15, after "3R" insert --(SEQ. ID No. 108)--;

Line 20, after "of" insert --an--; and

Line 21, after "using" insert --a--.

Page 24, Line 1, delete "ug" and insert -- $\mu$ g--; after "7-i)" insert a comma --,--;

Line 3, delete "the";

Line 5, delete "with the conditions as follows;" and insert --using the following conditions:--;

Line 6 to 12, delete all "ul" and insert -- $\mu$ l--;

Lines 11 and 12, delete "uM" and insert -- $\mu$ M--;

Line 15, delete "sec annealing" and insert --sec, annealing--;

Line 16, after "amplification," insert --a--;

Line 17, delete "size of" and insert --sizes of the--; and

Line 18, delete "About" and insert --An approximately--.

Page 25, Line 2, delete "in the plasmid," and insert --into the plasmid--; after "using" insert --a--;

Line 3, delete "by" and insert --of--;

Line 4, before "DH5" insert --strain--; after "with" insert --the--;



Line 6, delete "the"; delete "method." and insert --methods.--;

Line 7, before "OCIF" insert --the--; after "using" insert --a--;

Line 11, delete "sequence number" and insert --SEQ. ID Nos.--;

Line 12, delete "N- or C- terminal side in the" and insert --the amino or carboxyl terminus of the 132--;

Line 13, delete "of the 132 amino acid polypeptide";

Line 14, delete "sequence number" and insert --SEQ. ID No.--;

Line 15, delete "the polypeptide." and insert --OCIF.--;

Line 22, after "using" insert --a--; and

Line 23, after "using" insert --a--.

Page 26, Line 5, after "using" insert --a--;

Line 6, delete "ug" insert --µg--;

Line 7, after "7-i)" insert a comma --,--; before "EcoRI" insert --An--;

Line 8, after "from" delete "the"; after "adaptor" insert --DNA--;

Line 11, delete "with the adaptor was inserted in" and insert --comprising the adaptor was ligated into a--;

Line 12, after "at" insert --the--;

Line 13, after "using" insert --a--;

Line 14, delete "and" and insert --, yielding a--; delete "was prepared";

Line 17, delete "infected to E. Coli," and insert --used to infect E. coli strain--;

Line 19, delete "on the" and insert --onto--;



Line 21, after "(Amersham)" insert --membranes--; after "of" insert --the--; and

Line 22, delete "the".

Page 27, Line 1, delete "the standard protocol" and insert --standard methods--; delete "on" and insert --onto--;

Line 2, after "in" delete "the";

Line 5, before "denatured" insert --of--;

Line 8, delete "about 1.6 kb" and insert --a--;

Line 9, after "insert" insert --of about 1.6kb--;

Line 10, delete "and the infected into E. Coli" and insert --was used to infect E. coli strain--;

Line 11, delete "a" and insert --the--; delete "of" and insert --in the--;

Line 13, delete "1OCIF" and insert --λOCIF--;

Line 20, delete "picking up" and insert --lifting--;

Line 21, delete "to" and insert --in the--; and

Line 24, delete "transferred" and insert --transferred--.

Page 28, Line 2, delete "the standard protocol" and insert --standard methods--;

Line 7, after "using" insert --a--;

Line 8, after "T7" delete "primers";

Line 10, delete "sequence numbers" and insert --SEQ. ID Nos.--;

Line 11, delete "sequence number" and insert --SEQ. ID No.--;

Line 12, delete "sequence number" and insert --SEQ. ID No.--;



Line 16, after "pBKOCIF" insert a comma --,--; after "cDNA" insert a comma --,--;

Line 17, delete the commas (both occurrences) ",";

Line 18, after "electrophoresis" delete ",";

Line 19, after "using" insert --a--;

Line 20, delete the line in its entirety and insert --insert was ligated into the--;

Line 21, after "(Invitrogen)" insert --using DNA ligation kit ver. 2 (Takara Shuzo),  
and--; after "enzymes" delete ","; and

Line 22, delete "E. coli." and insert --E. coli strain--.

Page 29, Line 2, after "using" insert --a--;

Line 3, delete ",";

Line 4, delete "was used in the experiments" and insert --for use in the  
experiments--;

Line 5, delete "the" and insert --OCIF--;

Line 6, delete the comma ",";

Line 7, before "prepared" insert an open paren --(--;

Line 8, delete "in" and insert --into--; delete "the" and insert --a--;

Line 11, delete the comma ",";

Line 12, delete "and were" and insert --,--;

Line 17, delete "the transfected cells were incubated" and insert --incubation--;

Line 20, delete "mice, 17 days-old," and insert --17 day old mice--;

Line 21, delete " $2 \times 10^{-8} M$ ", and insert -- $1 \times 10^{-8} M$ --; and



Line 22, delete "D<sub>3</sub>, and each" and insert --D<sub>3</sub> and a--; and delete "inoculatd" and insert --inoculated--.

Page 30, Line 5, delete "then"; after "using" insert --an--;

Line 7, delete "The decrease of" and insert --A decrease in--; and

Line 8, delete "As result, the" and insert --The--.

Page 31, Line 4, delete "of";

Line 5, delete "with" and insert --using a--; delete "Milipore" and insert --Millipore--;

Line 6, delete "50 ml of a" and insert --a 50 ml--;

Line 9, after "with" insert --a--;

Line 10, after "and" insert --8 ml--; delete "(8 ml)";

Line 12, delete "OCIF active fraction (112 ml)" and insert --An OCIF active 112 ml fraction,--; after "NaCl" insert a comma --,--;

Line 18, after "with" insert --a--;

Line 19, delete a comma ","; after "and" insert --0.5 ml--; delete (0.5 ml);

Line 22, delete "On SDS-PAGE under reducing conditions, a" and insert --A--; and

Line 23, delete "KD" and insert --kD--; delete ", under" and insert --by SDS-PAGE under reducing conditions.--.

Page 32, Line 1, delete "non-reducing conditions, bands" and insert --Bands--; delete "an apparent" and insert --apparent molecular weights of--; delete "KD" and insert --kD--;

Line 2, delete "KD" and insert --kD--; after "32" insert --under non-reducing conditions--;

Line 3, delete "fraction from" and insert --from fractions--;



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Line 5, after "Lowry" insert a comma --,--;

Line 10, after "enzymes" delete the comma ",";

Line 11, delete "an"; delete the comma ",";

Line 12, after "using" insert --a--;

Line 14, delete the comma ",";

Line 16, delete the comma ","; after "using" insert --a--;

Line 18, after "using" insert --a--;

Line 19, after "using" insert --a--;

Line 20, delete "coli." insert --coli strain--; and

Line 21, delete "The" and insert --A--.

Page 33, Line 1, after "of" insert --the--;

Line 3, delete "prepared in the" and insert --prepared in--;

Line 4, delete "the";

Line 5, delete "method." and insert --methods.--;

Line 6, delete "chrolide" and insert --chloride--;

Line 7, after "to" insert --the--;

Line 15, delete "to" and insert --into--;

Line 18, delete "200" and insert --Two hundred--;

Line 19, delete "CG";

Line 20, delete "2x10<sup>7</sup> cells of"; before "were" insert --cells (2x10<sup>7</sup>)--; and

Line 22, after "using" insert --a--; and delete "condition" and insert --the conditions--.



Page 34, Line 3, delete "Then the" and insert --The--; after "were" insert --then--;

Line 4, delete "in" and insert --into--;

Line 14, delete "the" and insert --a--; delete "amount" and insert --amounts--;

Line 15, after "OCIF," insert --named--;

Line 17, delete "EX-CELL 301 medium (3l) in a 3";

Line 18, delete "the clone (5561)" and insert --clone 5561--; delete "l-spinerflask was inoculated with" and after "(5561)" insert --was inoculated into a 3l-spiner flask with Ex-CELL 301 medium (3l)--; and

Line 20, delete "to".

Page 35, Line 2, delete "cells-conditioned" and insert --cell-conditioned--;

Line 3, delete "CHOcells-conditioned" and insert --CHO cell-conditioned--; delete "EXAMPL" and insert --EXAMPLE--;

Line 4, delete "of"; before "0.22" insert --a--;

Line 5, delete "Milipore" and insert --Millipore--;

Line 8, after "with" insert --a--;

Line 9, after "and" insert --8 ml--; delete "(8";

Line 10, delete "ml)";

Line 11, delete "Active" and insert --An active--;

Line 13, delete "of";

Line 14, delete "a" and insert --an--; delete "blue" and insert --Blue--;

Line 17, after "with" insert --a--;

Line 18, delete the comma ",";



Line 19, delete "was" and insert --were--;

Line 20, delete "On SDS-PAGE";

Line 21, delete "under reducing conditions,"; delete "a" and insert --A--; after "with" insert --an--; after "apparent" insert --molecular weight of--;

Line 22, delete ", under non-reducing conditions, bands" and insert --using SDS-PAGE under reducing conditions. Bands--; and

Line 23, after "apparent" insert --molecular weights of--; and before "were" insert --using SDS-PAGE under non-reducing conditions--.

Page 36, Line 1, after "fraction," insert --from fractions--; and

Line 3, delete "obtained when" and insert --obtained, as--.

Page 37, Line 8, delete "sequence No." and insert --SEQ. ID No.--;

Line 9, delete "the 22th amino" and insert --glutamic acid located at position 22--;

Line 10, delete the line in its entirety and insert --from Met of the translation start site, as shown in SEQ. ID No.--;

Line 11, delete "number";

Line 13, delete "was undetectable." and insert -- could not be determined.--; delete "glutamine" and insert --glutamic acid--;

Line 14, delete "converting from" and insert --the conversion of--; delete "glutamine" and insert --glutamic acid--;

Line 15, delete the line in its entirety and insert --cell culture or purification steps.--;

Line 18, delete "from" and insert --in--;

Line 20, delete "sample was" and insert --samples were--; and



Line 23, delete "in" and insert --of a--.

Page 38, Line 1, delete "mice, 17 days-old," and insert --17 day old mice--;

Line 2, delete "to" and insert --into--; delete "in" and insert --of a--;

Line 4, delete "a" and insert --an--; delete "mesuring" and insert --measuring--;

Line 5, delete "The" and insert --A--;

Line 6, delete "of" and insert --in--; after "as" insert --an indication of--; delete "The"  
and insert --A--;

Line 7, delete "of" and insert --in--;

Line 8, delete "In detail," and insert --Briefly,--;

Line 11, after "590nm" insert a comma --,--;

Line 12, after "using" insert --a--;

Line 14, delete "was" and insert --were--;

Line 15, delete "The decrease of" and insert --A decrease in--;

Line 16, delete "of the" and insert --(the--; and

Line 17, delete "which were"; and delete "OCIF" and insert --OCIF)--.

Page 39, Line 3, delete "in the concentration" and insert --at concentrations--; delete "higher"  
and insert --greater.--;

Line 6, delete "Effect" and insert --The effect--;

Line 9, delete "In detail," and insert --Briefly, samples of--; delete "sample was" and  
insert --were--;

Line 10, delete "of";

Line 11, delete the comma ","; after "each" insert --of--;



Line 12, delete "in" and insert --of--;

Line 13, delete ";" and insert --at--;

Line 14, delete "FBS," and insert --FBS--; delete "ddy mice, 8 weeks-old, ;" and insert --8 week old ddy mice at--;

Line 15, delete "to" and insert --into--; delete "in 96-well plates" and insert --of a 96-well plate--;

Line 17, delete "with a kit for" and insert --using an--; after "phosphatase" insert --kit--;

Line 18, delete "The decrease of" and insert --A decrease in--;

Line 19, after "taken" insert --as an indication--; delete "of" and insert --in--;

Line 21, delete the line in its entirety and insert --are shown in Table 6 (rOCIF(E) and rOCIF (C)) and Table 7 (rOCIF(E) and--; and

Line 22, delete "nOCIF" and insert --nOCIF)--.

Page 40, Line 14, delete "in the concentration" and insert --at concentrations--; delete "higher" and insert --greater--;

Line 15, delete "from" and insert --in--; and

Line 17, delete "Effect" and insert --The effect--.

Page 41, Line 1, delete "In detail, each the" and insert --Briefly, samples of each of--; delete "sample";

Line 2, delete "was" and insert --were--;

Line 3, after "each" insert --of--; after "to" insert --the wells of--;

Line 4, delete "ddy mice, 17 days-old," and insert --17 day old ddy mice--;



Line 6, delete "to" and insert --into--; delete "in" and insert --of a--; delete "plates"  
and insert --plate--;

Line 7, delete "acetone" and insert --acetone--;

Line 8, delete "a kit for" and insert --an--; after "phosphatase" insert --kit--;

Line 10, delete "The" and insert --A--; delete "of" and insert --in--; after "as" insert  
--an indication of--;

Line 11, delete "of" and insert --in--; and

Line 20; please delete "in the concentration" and insert --at concentrations--; and  
delete "higher" and insert --greater--.

Page 42, Line 1, delete "Effect" and insert --The effect--;

Line 3, delete "In detail, each" and insert --Briefly, samples of each of--; delete  
"sample was" and insert --were--;

Line 5, delete "the"; after "in" insert --a--;

Line 6, delete "plates." insert --plate.--;

Line 7, delete ";" and insert --at--;

Line 8, delete "ddy mouse, 8 weeks-old, ;" and insert -- 8 week old ddy mouse, at--;

Line 9, delete "to" and insert --into--; delete "in" and insert --of a--; delete "plates"  
and insert --plate--;

Line 11, delete "a kit for" and insert --an--; after "phosphatase" insert --kit--;

Line 12, after "under" insert --a--;

Line 13, after "as" insert --an indication of--;



Line 20, delete "in the concentration" and insert --at concentrations--; and delete "higher" and insert --greater.--.

Page 43, Line 2, delete "would be able to" and insert --could--; delete "treatment of the" and insert --treating--;

Line 3, delete "with" insert --due to--; delete "which" and insert --that--;

Line 4, delete "which" and insert --that--;

Line 11, after "with" insert --a--;

Line 12, delete "Each the" and insert --The--;

Line 13, delete "was" and insert --were--;

Line 14, delete line in its entirety and insert --each lyophilized.--;

Line 16, before "molecular" insert --the--;

Line 18, after "using" insert --a--; and

Line 20, delete "vacuum, respectively." and insert --vacuum.--.

Page 44, Line 2, delete "Figure 6 and Figure 7." and insert --Figures 6 and 7, respectively.--;

Line 5, delete "in" (second occurrence) and insert --under--;

Line 8, before "molecular" insert --the--;

Line 9, after "same" insert -- (60KD)--;

Line 11, after "same" insert -- (120KD)--;

Line 13, delete "Remove" and insert --Removal of the--; delete "Mesuring" and insert --measuring the--; and

Line 16, after "using" insert --a--.

Page 45, Line 1, delete the comma ",";



Line 4, after "each" insert --of--; and

Line 6, after "each" insert --of the--.

Page 46, Line 2, delete "sequences" and insert --sequences--;

Line 3, delete "which is inserted" and insert --comprising--; delete "to" and insert --into plasmid--;

Line 4, delete "from one of some purified positive phage";

Line 5, delete "And more" and insert --Further--;

Line 9, after "using" insert --a--;

Line 10, delete "used primers" and insert --primers used--;

Line 11, delete "primers" (first occurrence) and insert a comma --,--;

Line 13, delete "the";

Line 14, delete "sequence number" and insert --SEQ. ID No.--;

Line 15, delete "the sequence number" and insert --SEQ. ID No.--;

Line 16, delete "the sequence number" and insert --SEQ. ID No.--;

Line 17, delete "the sequence number" and insert --SEQ. ID No.--;

Line 18, delete "the sequence number" and insert --SEQ. ID No.--;

Line 20, delete "the sequence number" and insert --SEQ. ID No.--; after "shown in" delete "the";

Line 21, delete "sequence number" and insert --SEQ. ID No.--;

Line 22, delete "the sequence number" and insert --SEQ. ID No.--; and

Line 23, after "and are" insert --briefly--; and delete "in brief".



Page 47, Line 1, before "OCIF2" insert --The--;

Line 2, after "in" insert --the--; delete "sequence number" and insert --SEQ. ID No.--;

Line 3, after "Accordingly" insert a comma --,--;

Line 5, delete "sequence number" and insert --SEQ. ID No.--;

Line 7, before "OCIF3" insert --The--; after "in" insert --the--;

Line 8, delete "sequence number" and insert --SEQ. ID No.--;

Line 9, after "Accordingly" insert a comma --,--; delete "and" insert --where--;

Line 10, delete "sequence number" and insert --SEQ. ID No.--;

Line 11, delete "have" and insert --has--;

Line 12, delete "secreted" and insert --secretion of--;

Line 13, after "in" insert --the--; delete "sequence number" and insert --SEQ. ID

No.--;

Line 15, after "Accordingly" insert a comma --,--;

Line 17, delete "sequence number" and insert --SEQ. ID No.--;

Line 19, delete the line in its entirety and insert --The OCIF4 cDNA has two point mutations in the OCIF cDNA (SEQ. ID No. 6).--;

Line 21, after "in" insert --the--;

Line 21, delete "sequence number" and insert --SEQ. ID No.--;

Line 23, after "Accordingly" insert a comma --,--; and

Line 24, delete "sequence number" and insert --SEQ. ID No.--.

Page 48, Line 4, delete "which is the" and insert --comprising--; after "of" insert --the--;



Line 5, after "in" insert --the--; delete "sequence" and insert --SEQ. ID No.--;

Line 6, delete "number";

Line 7, after "Accordingly" insert a comma --,--;

Line 8, delete "sequence" and insert --SEQ ID No. 5).--;

Line 9, delete the line in its entirety.

Line 11, before "OCIF5" (first occurrence) insert --The--; before "OCIF" (second occurrence) insert --the--;

Line 12, delete "sequence number" and insert --SEQ. ID No.--;

Line 13, after "Accordingly" insert a comma --,--; delete "and" and insert --where--;

Line 14, delete "sequence number" insert --SEQ. ID No.--;

Line 15, delete "have" and insert --has--;

Line 16, delete "secreted" and insert --secretion of--;

Line 17, before "OCIF5" insert --The--;

Line 18, delete "sequence number" insert --SEQ. ID No.--;

Line 20, after "Accordingly" insert a comma --,--;

Line 21, delete "sequence" and insert --SEQ. ID No. 5).--; and

Line 22, delete "number 5).".

Page 49, Line 3, delete "The Plasmid" and insert --Plasmids--; delete "was" and insert --were--;

Line 5, delete the comma " ,";

Line 6, delete the comma " ,";

Line 7, after "using" insert --a--;



Line 8, after "using" insert --a--;

Line 10, delete the comma ","; delete "coli." and insert --coli strain--;

Line 13, delete the comma ",";

Line 14, delete "an";

Line 15, after "using" insert --a--;

Line 16, after "using" insert --a--;

Line 17, delete "the" and insert --an--;

Line 18, delete the comma ","; after "E. coli" insert --strain--;

Line 21, delete "was"; after "with" insert --the--; delete the comma ","; and

Line 23, delete the comma ","; and after "using" insert --a--.

Page 50, Line 1, after "with" insert --the--; delete the comma ",";

Line 5, delete "an"; delete the comma ","; after "using" insert --a--;

Line 7, after "using" insert --a--; delete "E. coli." and insert --E. coli strain--;

Line 9, delete "obtained transformants" and insert --transformants obtained--; delete "variants" and insert --variant--;

Line 11, delete "column" and insert --columns--; delete "variants" and insert --variant--;

Line 13, delete "experiments" and insert --experiments--;

Line 16, delete "plasmid," and insert --plasmids--;

Line 17, delete "prepared"; and

Line 20, delete "a".



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Page 51, Line 5, delete "a"; before "DNA" insert --A--;

Line 7, after "using" insert --a--;

Line 12, before "DNA" insert --A--;

Line 13, after "using" insert --a--;

Line 14, delete "The" and insert --This--;

Line 16, delete "of" (second occurrence) and insert --from a--;

Line 18, delete "for" and insert --in--;

Line 20, after "E. coli" insert --strain--;

Line 21, delete "was" and insert --were--;

Line 22, delete "to the cells"; and

Line 23, delete "was added"; and after "NaCl" insert --was added to the cells--.

Page 52, Line 3, delete "individually" and insert --each--;

Line 4, delete "each"; delete "of" (second occurrence);

Line 10, after "with" insert --a--; and

Line 14, after "with" insert --a--.

Page 53, Line 13, delete "SEQUENCE NO:" and insert --SEQ. ID Nos.--;

Line 14, delete "as follows";

Line 16, after "min" (first occurrence) insert a comma --,--;

Line 18, delete "size" and insert --sizes--; delete "products was" and insert --products

were--;



Line 19, delete "using" and insert --of the--; delete "solution" and insert --solutions--;  
and

Line 20, after "using" insert --an--.

Page 54, Line 16, delete "size" and insert --sizes--; delete "prodcts was" and insert --products  
were--; and

Line 19, delete "mutation" and insert --mutations--.

Page 55, Line 7, delete "was" (second occurrence) and insert --were--;

Line 9, delete "with" and insert --using a--;

Line 11, delete "as";

Line 12, delete "of" (fourth occurrence) and insert --from a--;

Line 13, after "and" insert --the--;

Line 14, delete "E. coli DH5  $\alpha$ " and insert --E. coli strain DH5 $\alpha$ --;

Line 16, delete "a";

Line 19, delete "which is";

Line 21, delete "with" and insert --using a--; and

Line 24, delete "of" and insert --from a--.

Page 56, Line 1, after "and" insert --the--; after "E. coli" insert --strain--;

Line 3, delete "a" (second occurrence);

Line 8, delete "with" and insert --using a--;

Line 10, delete "as";

Line 11, delete "of" and insert --from a--;



Line 12, after "and" insert --the--; after "E. coli" insert --strain--;

Line 14, delete "a" (second occurrence);

Line 19, delete "with" and insert --using a--;

Line 21, delete "as"; delete "was" (second occurrence) and insert --were--; and

Line 23, delete "with" and insert --using a--.

Page 57, Line 1, delete "as";

Line 2, delete "of" (fourth occurrence) and insert --from a--;

Line 3, after "and" insert --the--;

Line 4, after "E. coli" insert --strain--;

Line 6, delete "a";

Line 13, delete "with" and insert --using a--;

Line 15, delete "as"; delete "was" (second occurrence) and insert --were--;

Line 17, delete "with" and insert --using a--;

Line 19, delete "as";

Line 20, delete "of" (fourth occurrence) and insert --from a--;

Line 21, after "and" insert --the--;

Line 22, after "E. coli" insert --strain--; and

Line 23, delete "a" (second occurrence).

Page 58, Line 10, delete "a"; delete "was" and insert --were--;

Line 14, delete "C19SDNA" and insert --C19S DNA--;

Line 16, delete "of" (second occurrence) and insert --from a--;



Line 17, after "and" insert --the--;

Line 18, after "coli" insert --strain--; and

Line 22, delete "plasmide" and insert --plasmids--.

Page 59, Line 4, delete "of" (second occurrence);

Line 6, delete "and" and insert --or--;

Line 7, delete "SEQUENCE NO:" and insert --SEQ. ID No.--; and

Line 12, delete "SEQUENCE NO:" and insert --SEQ. ID Nos.--; after "40-53" delete the comma --,--.

Page 60, Line 2, delete "fragment" and insert --fragments--;

Line 4, delete "as";

Line 6, delete "which is";

Line 8, delete "with" and insert --using a--;

Line 10, delete "was" (second occurrence) and insert --were--;

Line 12, delete "with" and insert --using a--;

Line 15, delete "of" (third occurrence) and insert --from a--;

Line 16, after "and" insert --the--;

Line 17, after "E. coli" insert --strain--;

Line 18, delete "a" (second occurrence); and

Line 23, delete "with" and insert --using a--.

Page 61, Line 1, delete "as" (first occurrence);

Line 2, delete "of" (third occurrence) and insert --from a--;



Line 3, after "and" insert --the--; after "E. coli" insert --strain--;

Line 6, delete "DNA ." and insert --DNA.--;

Line 8, delete "which is";

Line 10, delete "with" and insert --using a--;

Line 12, delete "as";

Line 13, delete "of" and insert --from a--;

Line 14, after "and" insert --the--; after "E. coli" insert --strain--; and

Line 19, delete "which is"; and

Line 21, delete "with" and insert --using a--.

Page 62, Line 2, delete "as"; delete "was" (second occurrence) and insert --were--;

Line 4, delete "with" and insert --using a--;

Line 6, delete "as";

Line 8, delete "of" and insert --from a--; after "and" insert --the--;

Line 9, after "E. coli" insert --strain--; and

Line 11, delete "a";

Line 14, delete "which is";

Line 16, delete "with" and insert --using a--;

Line 18, delete "as";

Line 19, delete "of" and insert --from a--;

Line 20, after "and" insert --the--; after "E. coli" insert --strain--; and

Line 22, delete "a" (second occurrence).



Page 63, Line 1, delete "which is";

Line 3, delete "with" and insert --using a--;

Line 5, delete "as";

Line 6, delete "of" and insert --from a--;

Line 7, after "and" insert --the--; after "E. coli" insert --strain--;

Line 9, delete "a" (second occurrence); and

Line 15, after "containing" insert --the--.

Page 64, Line 1, delete "of" and insert --from a--; after "and" insert --the--;

Line 2, after "E. coli" insert --strain--;

Line 4, delete "a" (second occurrence);

Line 8, delete "as";

Line 12, delete "of";

Line 15, delete "SEQUENCE NO:" and insert --SEQ. ID No.--;

Line 20, delete "SEQUENCE NO:" and insert --SEQ. ID Nos.--; and

Line 23, delete "as".

Page 65, Line 1, delete "which is";

Line 3, delete "with" and insert --using a--;

Line 5, delete "as";

Line 7, delete "of" and insert --from a--; after "and" insert --the--;

Line 8, after "E. coli" insert --strain--;

Line 10, delete "a" (second occurrence);



Line 12, after "pSK-OCIF-CL" insert a period --.;

Line 13, after "PCR" insert --reaction--; and

Line 15, after "OCIF-CCR3" insert --were as follows--.

Page 66, Line 6, delete "SEQUENCE NO:" and insert --SEQ. ID Nos.;

Line 12, delete "an";

Line 14, delete "The size of the PCR products was confirmed on an agarose gel.";

Line 15, after "using" insert --an--; and

Line 21, after "containing" insert --the--.

Page 67, Line 2, delete "as";

Line 3, delete "CC R3" and insert --CCR3--;

Line 14, delete "isolatedand" and insert --isolated and --;

Line 15, delete "as";

Line 16, delete "of" (second occurrence);

Line 18, delete "of" (second occurrence) and insert --from a--; and

Line 19, after "and" insert --the--; after "E. coli" insert --strain--.

Page 68, Line 1, after "in" (first occurrence) insert --the--;

Line 2, after "plasmid," insert --the--; delete "were" and insert --was--;

Line 7, delete "truncation" and insert --truncations--;

Line 8, delete "truncation" and insert --truncations--;

Line 9, delete "truncation" and insert --truncations--; before "OCIF" insert --An--;

Line 10, delete "of"; delete "are" and insert --were--;



Line 11, delete "of Leu-Val" and insert --(Leu-Val)--; before "OCIF" insert --An--;

Line 12, delete "of" (first occurrence); delete "are" and insert --were--; delete "of Ser-Leu-Asp" and insert --(Ser-Leu-Asp)--;

Line 13, before "OCIF" insert --An--; delete "of";

Line 14, delete "are" and insert --were--; delete "OCIF muatant" and insert --An OCIF mutant--;

Line 15, delete "of" (first occurrence); delete "are" and insert --were--; delete "of Leu-Val" and insert --(Leu-Val)--;

Line 17, delete "SEQUENCE NO:" and insert --SEQ. ID No.--;

Line 18, delete "was" and insert --were--; delete "one of the";

Line 19, delete "restriction enzymes,"; delete ", and" and insert --or--;

Line 20, delete ", and";

Line 21, delete "Ends" and insert --The ends--;

Line 22, after "in" (second occurrence) insert --a--; and

Line 23, delete "volumes" and insert --volume--.

Page 69, Line 2, delete "of" and insert --from a--;

Line 4, after "E. coli" insert --strain--;

Line 8, delete "for";

Line 9, delete "pSK-OCIF- CSph" and insert -- pSK-OCIF-CSph--;

Line 10, delete "of";

Line 11, after "containing" insert --the--;



Line 13, delete "contain" and insert -- contained--; delete "pSK-OCIF- CSph" and insert --pSK-OCIF-CSph--;

Line 14, delete "and" and insert --or--; delete "as";

Line 18, delete "of" (second occurrence) and insert --from a--;

Line 19, after "and" insert --the--;

Line 20, after "coli" insert --strain--;

Line 22, after "which " insert --the--; delete "is" and insert --was--; and

Line 24, delete "and" and insert --or--.

Page 70, Line 1, delete "as";

Line 3, delete "Preparation" and insert --Preparation--;

Line 4, after "(" insert --a--;

Line 5, after "by" insert --using--; delete "column" and insert --columns--;

Line 8, delete "manipulations" and insert --manipulations--;

Line 13, delete "A 24-well plate was used for the DNA";

Line 14, delete "transfection.";

Line 15, delete "the" and insert --a 24 well--;

Line 17, delete "Mixture of an" and insert --A mixture of the--;

Line 19, delete "a CO<sub>2</sub> incubator" and insert --5% CO<sub>2</sub>--;

Line 21, delete "48 more" and insert --a further 48--; delete "the CO<sub>2</sub> incubator" and insert --5% CO<sub>2</sub>--;

Line 22, delete "for assay" and insert --in assays--;



Line 23, delete "SEQUENCE NO:" and insert --SEQ. ID Nos.--; and

Line 24, delete "SEQUENCE NO:" and insert --SEQ. ID No.--.

Page 71, Line 2, delete "Antigen" and insert --The Antigen--;

Line 3, delete "specific" and insert --the--;

Line 4, delete "the" and insert --each--; delete "the"; and delete "mutants" and insert --mutant--.

Page 72, Line 4, after "OCIF" insert a semicolon --;;

Line 5, after "50%" please insert a semicolon --;;

Line 7, after "activity" insert a period ---.;

Line 8, delete "western" and insert --Western--;

Line 10, delete "the" and insert --each--;

Line 11, delete "bromo phenol" and insert -- bromophenol --;

Line 12, after ")" insert a comma --,--; delete "a"; delete "polyacryl amide" and insert --polyacrylamide--;

Line 16, delete "peroxidase labeled" and insert -- peroxidase-labeled --;

Line 18, after "using" insert --an--;

Line 20, after "exclusively" insert --a--; after "for" insert --the--; and

Line 21, after "CC" insert --mutants--; delete "an".

Page 73, Line 3, delete "resare" and replace with "residues are"; and

Line 4, delete "SEQUENCE NO:" and insert --SEQ. ID No.--.

Page 74, Line 5, delete "purchased from STRATAGENE" and insert --(Stratagene)--;



Line 8, delete "also were" and insert --were also--;

Line 11, delete "on" and insert --onto--;

Line 16, delete "successively for one minute each" and insert --each one--;

Line 17, after "7.5)" insert --, successively for one minute--; delete "wet" and insert --wetted--; and

Line 19, delete "on" and insert --onto--; delete "in" and insert --using a--.

Page 75, Line 7, delete "PFOTO" and insert --PHOTO--;

Line 12, delete "1ml or 20ml" and insert --1µl or 20µl--; and

Line 13, delete "on" and insert --onto--.

Page 76, Line 8, delete "the";

Line 10, delete "the";

Line 13, delete "determination of the" and insert --determining their--;

Line 14, delete the comma ",";

Line 15, delete "these from" and insert --therefrom--;

Line 16, delete "pairs" and insert --pair--; after "using" insert --a--; and

Line 20, after "(STRATEGENE)" insert a comma --,--.

Page 77, Line 3, after "and" insert --a--; delete "of";

Line 5, delete "in" and insert --into--;

Line 8, delete "in" (second occurrence) and insert --into a--;

Line 11, delete "applied" and insert --separated--;

Line 13, delete "in" and insert --into--;



Line 15, delete "pBS6 H1.1" and insert -- pBS6H1.1--;

Line 17, after "using" insert --a--;

Line 18, after "and" insert --a--;

Line 22, delete "the";

Line 23, delete "Nucleotide" and insert --The nucleotide--; delete "was" and insert --is--; and

Line 24, delete "Sequence No" (first occurrence) and insert --SEQ. ID No.-- delete "Sequence No" (second occurrence) and insert --SEQ. ID No.--.

Page 78, Line 2, delete "of nucleotides"; delete "sequence" and insert --SEQ. ID--;

Line 3, delete "sequence" and insert --SEQ. ID No.--;

Line 8, delete "for" and insert --in--; delete "Three male JW rabbits (Kitayama";

Line 9, delete "the line in its entirety and insert --For--;

Line 10, after "immunization," insert --an--;

Line 11, delete "The" and insert --Three--;

Line 12, delete "the interval of"; after "week" insert --intervals--;

Line 13, delete "The rabbits were injected six times at the interval";

Line 14, delete "of seven days subcutaneously";

Line 15, delete "separated" and insert --isolated--;

Line 17, delete "40 w/v %," and insert --40% w/v, the--;

Line 18, delete ". Precipitate" and insert --The precipitate--;

Line 20, delete "resulting" and insert --resultant--;



Line 22, delete "Elutes were" and insert --The eluate was immediately--; and

Line 23, delete "immediately and were" and insert --and--.

Page 79, Line 2, delete "peroxidase labeled" and insert --peroxidase-labeled--; after "using" insert --an--;

Line 6, delete "separeted by" and insert --separated using a--; delete "Protein pool" and insert --The protein pool was--;

Line 7, delete "maleimide activated" and insert --maleimide-activated--; delete "was" and insert --and--;

Line 12, delete "4C" and insert --4°C--;

Line 14, delete "of";

Line 16, delete "peroxidase labeled" and insert -- peroxidase-labeled --;

Line 17, delete "temperture" and insert --temperature--; and

Line 21, delete "standared" and insert --standard--; delete "was" and insert --is--.

Page 80, Line 2, after "of" insert --a--;

Line 3, after "from" insert --the--; delete "fibroblasts" and insert --fibroblast--;

Line 4, after "IMR-90" insert --cells--; delete "Eample" and insert --Example--;

Line 6, delete "administrating" and insert --administering--;

Line 7, after "emulsion" insert --was--;

Line 8, delete "was administered";

Line 9, delete "administration" and insert --immunization--; delete "taken out," and insert --removed and--;

Line 10, delete "were";



Line 11, delete "the conventinal method" and insert --conventional methods--;

Line 12, delete "hybridoma" and insert -- hybridomas--; delete "Subsequently, to check";

Line 13, delete "whether the selected hybridomas produce anti-OCIF antibody," and insert --The presence of--;

Line 14, delete "each" and insert --the--; delete "hybridomas" and insert --each hybridoma--; delete "which" and insert --. Briefly,--;

Line 15, delete "was prepared by coating"; delete "in" and insert --of a--; delete "immunoplates" and insert -- immunoplate--; after "(Nunc)" insert --was coated--;

Line 16, delete "by blocking each well" and insert --blocked--;

Line 18, delete "by cloning 3-5 times by limit dilution" and insert --by limit dilution cloning 3-5 times--;

Line 19, delete "screening using the above"; delete ". Among thus obtained" and insert --screening--;

Line 20, delete the line in its entirety and insert --Several hybridoma clones producing high levels of anti-OCIF--; and

Line 23, delete ", which was".

Page 81, Line 1, delete the comma ","; delete "to" and insert --into--;

Line 2, after "(Aldrich)" insert a comma --,--;

Line 3, delete "the transplantation and the ascites containing" and insert --transplantation, thereby obtaining--;

Line 4, delete "was obtained" and insert a period --.--;



Line 6, delete "maufacturer's" and insert --manufacturer's--; delete "That is" and insert --Briefly--;

Line 7, after "ascites" insert --fluid--; after "with" insert --an--;

Line 8, after "to" insert --a--; delete "the" (second occurrence);

Line 10, delete "obtained eluate" and insert --eluate obtained--;

Line 11, delete "obtained antibody" and insert --antibody thereby obtained--;

Line 13, delete "antibody" and insert --antibodies--; delete "to" and insert --for--;

Line 15, delete "concentration of protein in the solution" and insert --protein concentration--;

Line 16, delete "with" and insert --was diluted to--; delete "was prepared";

Line 18, delete "diluted solution" and insert --dilute concentrations--;

Line 19, after "Thus" please insert a comma --,--; and

Line 20, delete "can be" and insert --were--.

Page 82, Line 4, delete "protocol disclosed in the" and insert --kit--; delete "were" and insert --are--;

Line 5, after "to" insert --the--;

Line 6, after "IgG<sub>2b</sub>," insert --subclasses--;

Line 8, delete "in" and insert --of--;

Line 13, delete "Determination" and insert --Quantitation--;

Line 14, delete ", which were";

Line 15, delete "(25-iv)," and insert --25-iv--;

Line 17, delete "each combination" and insert --different combinations--; and



Line 18, after "using" insert --an--; and delete "Maleimide Activiated" and insert --Maleimide-Activated --.

Page 83, Line 2, delete "in" and insert --of a--;

Line 3, after "allowing" insert --them--;

Line 4, delete "in" and insert --of--;

Line 5, delete "then";

Line 6, delete "was";

Line 8, delete "bufer" and insert --buffer--;

Line 9, delete "in" and insert --of a--; delete "immunoplates" and insert --immunoplate--;

Line 11, delete "the"; delete "For";

Line 12, delete the line in its entirety;

Line 13, delete the line in its entirety and insert --the POD-labeled--;

Line 14, after "buffer" insert --(0.1 M Tris-HCl buffer, pH 7.4, containing 25% Blockace and 0.1% Tween 20)--;

Line 15, delete "in" and insert --of--; delete "imunoplate" and insert --immunoplate--;

Line 16, delete "C" (second occurrence);

Line 17, delete "the";

Line 19, delete "in" and insert --of--;

Line 20, delete "were"; and

Line 24, delete "kinds of" and insert --different--; delete "antibody in" and insert --antibodies of--.



Page 84, Line 1, delete "a" and insert --an--;

Line 2, after "OCIF" insert --concentration--; delete "in" and insert --of--;

Line 4, after "A1G5" insert a comma --,--;

Line 5, delete "was" and insert --, is--;

Line 7, delete "Concentration" and insert --The concentration--;

Line 9, after "of" insert --the--;

Line 10, delete "in" and insert --of--;

Line 11, delete "in" and insert --of--; delete "immnuoplates" and insert  
--immunoplates--;

Line 12, delete "then"; delete "the";

Line 13, delete "in" and insert --of--;

Line 14, after "with" insert --the--;

Line 15, delete "the" (second occurrence);

Line 18, delete "in" and insert --of--; and

Line 23, delete "sample".

Page 85, Line 13, delete "Male" and insert --Six week old male--; delete ", 6 weeks old,"; after  
"of" insert --the--;

Line 16, delete "intravenous administration of vehicle" and insert --the vehicle  
administered intravenously--;

Line 17, delete "administered OCIF" and insert --with OCIF administered--; and

Line 18, delete "administered OCIF" and insert --with OCIF administered--.